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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,778	09/29/2003	Byeong-hwa Ahn	1349.1279	1062
21171	7590	09/20/2006	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			GRAINGER, QUANA MASHELL	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/671,778

Applicant(s)

AHN ET AL.

Examiner

Quana M. Grainger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7 and 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 9-18 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirst (US 5,627,722) in view of Oguma et al. (US 2002/0064390) in view of Osaka, and further in view of Tanizaki (JP2001-356553A).

Hirst teaches a high voltage supply (fig. 1 part 101) for use in powering multiple developers in a color electrophotographic printer (abstract 1st sentence), the voltage supply device comprising: a switching network (fig. 1 part 102) with a plurality of relays (fig. 2 parts 250-252) for selectively connecting one out of the four developers (col. 2 lines 37-57) (ie. voltage changeover units for selectively supplying the voltage), while leaving the other 3 non selected outputs at either a floating value, short, or a constant DC bias (col. 3 lines 1-3).

Hirst does not teach the developing rollers to have a fixed contact point at one end, nor does he explicitly teach the developers being set at a fixed distance from a photosensitive drum. Hirst

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also does not teach explicitly placing the circuits of the invention onto a printed circuit board with input and output terminals.

Oguma teaches a development sleeve (fig. 1 part 12) having a coil spring electrode (fig. 1 part 29b) at one end as a contact portion to supply the development bias (p. 4 paragraph [0053]) (ie. fixed contact point terminal at one end of developing device) to a developing roller 12 voltage unit, a developer feed member 16 voltage unit and a developer layer thickness restricting blade 18 voltage unit. The development bias provided through the coil spring is used to power the many parts of the development unit (p. 4 paragraph [0053]) (ie. plurality of different elements of the developing devices). Oguma further teaches an image forming apparatus (fig. 4) that includes a photosensitive member, and a developing sleeve that is set at a fixed distance from the photosensitive drum (fig. 4 and fig. 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the developers taught by Hirst to have the coil spring electrodes at one end as taught by Oguma. One of ordinary skill in the art would have been motivated to do so in order to provide a more stable development bias voltage, and to ensure a more stable electric contact (p. 1 paragraph [0013] and [0015]). It is noted that the claim limitations call for a plurality of fixed contact terminals and a plurality of color developing devices. However, it is notoriously well known in the art to take a monotone image forming apparatus such as that taught by Oguma and make it a color image forming apparatus, upon which the "plurality" limitation will be met.

Osaka teaches placing a power supply circuit for an image forming apparatus onto a printed circuit board (fig. 1; note: col. 2 lines 56-64). Osaka teaches the printed circuit board to

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have at one end an input connector for inputting from a power source (fig. 1 part 23) (ie. plurality of fixed contact terminals, PCB input terminal), and at the other end having output connectors (fig. 1 part 24) (ie. PCB output terminal) for selectively outputting the power to different parts of the image forming apparatus (col. 4 lines 3-31).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention taught by Hirst in view of Oguma, by placing the various power circuits onto a printed circuit board as is taught by Osaka, and having the inputs connected to the high voltage power supply taught in Hirst. By combining the references as such, the output terminals found on the printed circuit board of Osaka can be easily connected to the coil spring electrode taught by Oguma (ie. terminal connecting parts connecting the PCB output terminals and the fixed contact point terminals). One of ordinary skill in the art would have been motivated to do so in order to reduce an overall size of the apparatus (col. 3 lines 13-18).

Tanizaki teaches a voltage changeover unit located at an opposite side to the developing device with reference to the printed circuit board. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Tanizaki with the image forming device of Hirst since it is known in the art to located the elements in this order as is taught by Tanizaki. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a toner supplying roller with the teaching of the image forming device of Hirst since it is known in the art to use a toner supplying roll or agitator in an image forming apparatus.

***Prior Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Karakama et al. (6,826,380) teaches an image forming apparatus using a toner agitator or a toner supply roller.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-5 and 19 have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quana M. Grainger whose telephone number is 571-272-2135. The examiner can normally be reached on 8am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read 'Quana M Grainger', with a stylized, flowing script.

Quana M Grainger  
Primary Examiner  
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QG